Remarks/Arguments

In the July 29, 2005 office action, claims 1, 2, 4, 6 and 8 were rejected under section 102(b) as being anticipated by Lurwig (US Patent No. 5,450,714). Claim 3 was rejected under section 103(a) as being unpatentable over Lurwig in view of Samejima et al '561 (US Patent No. 5,465,561). Claims 9, 10 and 13 were rejected under section 103(a) as being unpatentable over Samejima '561 in view of Lurwig. Claims 14, 15, 17, 18 and 20 were rejected under section 103(a) as being unpatentable over Lurwig in view of Samijima et al '885 (US Patent No. 4,936,885). Claim 19 was rejected under section 103(a) as being unpatentable over Lurwig in veiw of Samejima '885, and further in view of van der Lely '359 (US Patent No. 4,149,359).

In response to the objection, claims 1, 9 and 14 are amended to better distinguish the patentable subject matter over the cited references. Claims 3 and 13 are cancelled.

Claim 1 is amended to specify a a first roller bearing positioned in the first collar around the output shaft, a second roller bearing positioned in the second collar around the end of the output shaft, and an internal recess in the cover that is dimensioned to provide adequate clearance for the first spiral bevel gear. By positioning one roller bearing 31 in the bottom of the housing and another roller bearing 31 in the cover, both bearings are contained in the housing but are far enough apart so that output shaft 15 is not subjected to an excessive bending moment. To provide a low profile gear box, the cover has two functions -- it holds a bearing and provides a recess for the input gear. Claim 1 is patentable over Lurwig and Samejima '561.

Lurwig does not show an internal recess in removable top housing 53 to provide clearance for drive gear 42, as specified in claim 1. Instead, Lurwig's removable top housing has a underside that is above the outer perimeter of drive gear 42 and upper driven gear 43. See Lurwig at Fig. 2. Lurwig is an example of a prior art gearbox having a very high center of gravity -- the very problem addressed by the present invention.

Samejima's bevel gear case does not contain both of the bearings needed for the output shaft. Samejima '561 shows bevel gear case 3 that houses only a single bearing near the bottom of the bevel gear case. Samejima's other bearing is

positioned in bearing holder 9 bolted to the underside of blade housing 1, outside the bevel gear case. See Samejima '561 at Fig. 2 and column 2, line 60 through column 3, line 12. Samejima's cover plate does not provide a bearing holder as specified in claim 1.

The proposed combination of Lurwig and Samejima '561 fails to show or suggest the subject matter of claim 1: a gearbox cover having both an internal recess for the input gear and a bearing holder. If an internal recess was added to Lurwig's removable top housing, that recess would be useless because it would be blocked by upper driven gear 43. Samejima '561 teaches away from including a bearing holder in the cover. Instead, Samejima '561 is directed to a separate bearing outside the gearbox, below the deck. One must use impermissible hindsight to turn the proposed combination into the claimed invention.

Claims 2, 4 and 6-8 are patentable for at least the same reasons as claim 1.

Claim 9 is amended to specify the housing has a bottom with an opening and a collar receiving and positioning a first roller bearing to rotatably support the output shaft between the first and second ends; the housing having a removable cover with a collar receiving and positioning a second roller bearing to rotatably support the first end of the output shaft and an internal recess dimensioned to provide adequate clearance space for the first spiral bevel gear. Claim 9 is patentable over Samejima '561 and Lurwig.

Samejima's cover plate lacks a second roller bearing as set forth in claim 9. Samejima '561 shows a bevel gear case 3 housing only a single bearing near the bottom of the bevel gear case. The other bearing is positioned in bearing holder 9 bolted to the underside of blade housing 1, outside the bevel gear case. See Samejima '561 at Fig. 2 and column 2, line 60 through column 3, line 12. Samejima's bevel gear case does not hold both of the bearings needed for the output shaft.

Lurwig fails to show an internal recess in removable top housing 53 to provide clearance for drive gear 42. Instead, Lurwig's removable top housing has a lower surface above the outer perimeter of drive gear 42 and upper driven gear 43. See Lurwig at Fig. 2.

If Samejima '561 and Lurwig were combined, they would not teach the present invention as set forth in claim 9. Lurwig's upper driven gear 43 would block and render useless an internal recess in Lurwig's removable top housing. A bearing

holder in Samejima's cover plate would be contrary to Samejima's teaching of a separate bearing holder under the deck. Impermissible hindsight is the only way to make the invention of claim 9 from the proposed combination of Samejima '561 and Lurwig.

Claim 14 is amended to specify the housing has a collar at the bottom surface for receiving and positioning a first roller bearing to rotatably support the generally vertical shaft extending through the opening between the first and second ends of the shaft, the housing having a cover with a collar for receiving and positioning a second roller bearing to rotatably support the first end of the generally vertical shaft and an internal recess dimensioned to provide adequate clearance space for the spiral bevel gear on the generally horizontal shaft. Claim 14 is patentable over Lurwig and Samejima '885.

Lurwig fails to show an internal recess in removable top housing 53 to provide clearance for drive gear 42. Instead, Lurwig's removable top housing has a lower surface above the outer perimeter of drive gear 42 and upper driven gear 43. See Lurwig at Fig. 2. There is no suggestion to provide an internal recess in Lurwig's removable top housing 53.

Lurwig fails to show other limitations of claim 14: a grass mowing machine having an operator platform, an engine, a transmission connected to the engine, and a generally horizontal shaft extending from the transmission, the generally horizontal shaft having a first end and a second end, the gear box positioned between the mower deck and operator platform, a pulley connected to the generally vertical shaft.

Samejima '885 does not suggest a gearbox cover with an internal recess and bearing holder. Moreover, the proposed combination of Lurwig and Samejima '885 fails to show a gearbox cover with both an internal recess and a bearing holder, as specified in claim 14. Claim 14 is patentable over the proposed combination.

Claims 15 and 17-20 are patentable for at least the same reasons as claim 14.

In conclusion, it is believed that this application is in condition for allowance, and such allowance is respectfully requested.

Any fees or charges due as a result of filing of the present paper may be charged against Deposit Account 04-0525. Two duplicates of this page are enclosed.

Respectfully,

Attorney for Applicant(s)

Attorney for Applicant(s)

Stephen D. Dellett
Reg. No. 32,564
Patent Department
Deere & Company
One John Deere Place
Moline, IL 61265
Telephone No. (309) 765-4232

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to:
Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
on: 10/24/05
Date

Deere & Company
Kelly M Leary 10/24/05
Signature Date